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IS 11122-1 (1985): Specification for Letterpress Printing Plates and Equipment, Part 1: Original Printing Plates [MED 25: Printing Machinery]

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Indian Standard

SPECIFICATION FOR LETTERPRESS PRINTING PLATES AND EQUIPMENT

PART 1 ORIGINAL PRINTING PLATES

1. Scope — Deals with the depth of etch for half-tone and line printing plates used for direct flat-bed printing or duplication. Guidance on the use of these plates has been given in Appendix A.

2. Material — The type of material shall be as agreed to between the customer and the engraver.

3. Depth of Etch (Line)

3.1 Line plates for subsequent duplication and use in newspaper rotary printing shall be etched to a depth of 0·711 mm.

3.2 Line plates for direct letterpress shall be etched to a depth of 0·559 mm.

3.3 Line plates for rubber stereos shall be etched to a depth as agreed to between the engraver and the customer, and may well vary considerably in accordance with the purpose for which the rubber plate is to be used.

The depths may vary by ± 0·025 mm. All readings shall be taken in the open etched areas, not less than 6·3 mm from the printing area.

4. Depth of Etch (Half-Tone) — Half-tone plates shall be etched to a depth not less than that given for the appropriate number of screen lines per 25 mm as given in Table 1.

TABLE 1 MINIMUM DEPTHS OF ETCH

All dimensions in millimetres.

Screen Lines per 25 mm	Highlight 10 percent	Midtone 50 percent	Shadow 90 percent
50	0·152	0·121	0·095
55	0·140	0·108	0·076
60	0·133	0·102	0·063
65	0·121	0·089	0·057
75	0·108	0·076	0·044
85	0·089	0·063	0·038
100	0·076	0·051	0·038
120	0·063	0·038	0·032
133	0·057	0·038	0·025
150	0·051	0·025	0·019

5. Method of Depth Measurement — A precision depth measuring micrometer or dial depth gauge shall be used for the measurement of depth of etch. For measuring of line plates, a needle type depth gauge shall be used.

6. Quality of Etch — The profile of the relief, whether line or dot, shall be clearly etched and be similar to that shown in Fig. 1. All other profiles, as illustrated in Fig. 2 to 8 shall be avoided.

7. Finishing — Physical corrections of tone values by burnishing shall be avoided. The routing of plates to obtain greater depth to ensure clean printing is an accepted practice. The degree of 'skeletonizing' (excessive removal of non-printing metal) is a matter of agreement between the purchaser and the photo-engraver and shall take account of the need to minimize the risk of distortion during transport and use.

Printing Machinery Sectional Committee, EDC 86; Letterpress Subcommittee, EDC 86 : 1 [Ref : Doc : EDC 86 (3877)]

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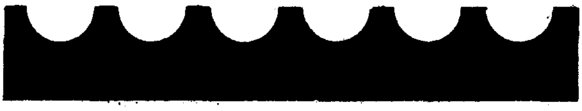
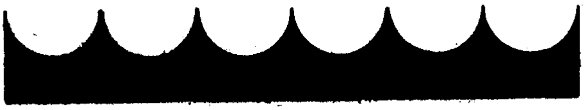
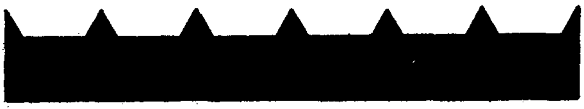


FIG. 1 CORRECTLY FORMED PROFILE



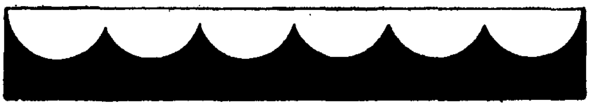
Will probably collapse under pressure

FIG. 2 PIN POINT HIGHLIGHTS



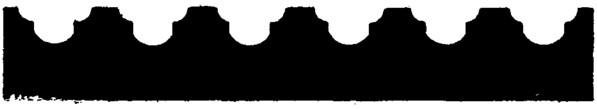
Possible 'filling-in' especially after moulding

FIG. 3 INSUFFICIENT DEPTH



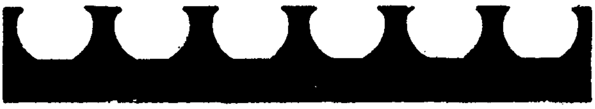
Tops of dots below printing surface

FIG. 4 OVER ETCHED



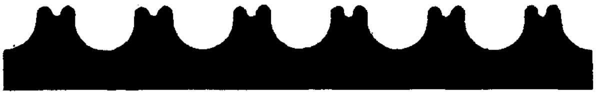
Effective printing depth less than measured depth

FIG. 5 FALSE DEPTH



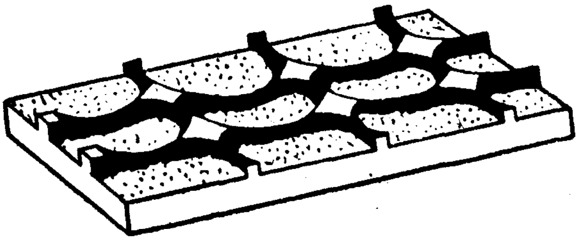
Will prevent removal of matrix. Dots will be damaged

FIG. 6 UNDERBITING



Reduction in printing area. Loss in density

FIG. 7 PITTED DOTS



Could print up during printing run

FIG. 8 BRIDGES CONNECTING DOTS

APPENDIX A

(*Clause* 1)

GUIDANCE FOR THE USE OF HALF-TONE AND LINE PRINTING PLATES

A-1. Whatever the quality of plate, it will not print satisfactorily unless the paper used for printing has been taken into account when the screen ruling is selected. In general, coated papers are less likely to result in the filling-up of etched areas on half-tones plate than uncoated papers. The general belief that the block is shallow may not always be correct. The fault may result from the screen selected being too fine for the paper being used, or the ink being too thin. Either or both of these conditions would produce a similar result to that caused by lack of printing depth.

Experiments have shown that there is a loss of depth in the moulding process, especially in newspaper printing. In certain circumstances this may be critical and allowance may have to be made for the quality and treatment of the flong.

EXPLANATORY NOTE

This part of standard covers the requirements of original printing plates. This standard is being issued in the following four parts:

Part I Original printing plates

Part II Flat metal duplicate plates

Part III Galleys

Part IV Jobbing chases

If necessary other standards will be issued to cover other components. While preparing this standard assistance has been derived from BS 3649 : 1963 'Recommendations for original printing plates' issued by the British Standards Institution.

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